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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,301	07/02/2001	Hiroyuki Tanaka	OKI.249	2399

7590 05/08/2002

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EXAMINER

FENTY, JESSE A

ART UNIT	PAPER NUMBER
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2815

#5

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,301

Applicant(s)

TANAKA, HIROYUKI

Examiner

Jesse A. Fenty

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-5 in Paper No. 4 is acknowledged.
2. Claims 6-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Isobe et al. (U.S. Patent No. 6,337,504 B1).

5. In re claim 1, Isobe (Figs. 1A-3A) discloses a semiconductor device, comprising:

A pair of impurity regions (10, 8) formed at intervals on a semiconductor substrate;

A gate having a gate electrode (6) formed on said semiconductor substrate and sidewalls

(7) composed of insulating materials and formed on both sides of gate electrode;

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A pair of electrode members (10a) formed on both sides of said gate on said semiconductor substrate; and

Wherein said pair of said impurity regions is made up of first impurity regions (10) formed of an impurity and second impurity regions (8) each having a thickness being smaller than that of said first impurity region and extending below said gate electrode.

Terms such as “being used for a source and a drain” in line 2-3 and “used to control a drain current ...” on lines 5-6 are recitations of the intended use of the device. Terms that simply set forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

Language such as, “formed by impurity diffusion ... members” on lines 12-13 of the claim is a product-by-process limitation that does not distinguish the claimed invention to the structure of the prior art, and is not given patentable weight.

In re claim 2, Isobe discloses the device of claim 1, wherein said electrode member is composed of silicide and wherein said decide walls are composed of insulating materials.

The two limitations, “which has undergone implantation...” are again product-by-process limitations

In re claim 3, Isobe discloses the device of claim 1, wherein an impurity concentration in said second impurity region is almost the same as that in said first impurity region (column 4, lines 34-67).

In re claim 4, Isobe discloses the device of claim 1, wherein an impurity concentration in said second impurity region is smaller than that in said first impurity region (column 4, lines 34-67).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iguchi et al. (U.S. Patent No. 5,734,185) in view of Fang et al. (U.S. Patent No. 6,316,323 B1).

In re claim 1, Iguchi (Figs. 1a – 6q) discloses a semiconductor device, comprising:

A pair of impurity regions (31) formed at intervals on a semiconductor substrate;

A gate having a gate electrode (19) formed on said semiconductor substrate and sidewalls (16) composed of insulating materials and formed on both sides of gate electrode;

A pair of electrode members (Fig. 6q) formed on both sides of said gate on said semiconductor substrate; and

Wherein said pair of said impurity regions is made up of first impurity regions formed of an impurity and second impurity regions each having a thickness being smaller than that of said first impurity region and extending below said gate electrode.

Terms such as “being used for a source and a drain” in line 2-3 and “used to control a drain current ...” on lines 5-6 are recitations of the intended use of the device. Terms that simply set forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

Language such as, "formed by impurity diffusion ... members" on lines 12-13 of the claim is a product-by-process limitation that does not distinguish the claimed invention to the structure of the prior art, and is not given patentable weight.

Lastly, Iguchi does not expressly disclose the electrode members (Fig. 6q) formed in a manner so as to be in contact with the side walls. Fang (Fig. 2I) disclose a similar transistor and gate structure to Iguchi with electrode members (296, 299) in contact with the sidewalls. It would have been obvious to one skilled in the art at the time of the invention to form the electrode members as disclosed by Fang for the purpose, for example, of separately connecting the source and drain regions which would enhance the selectability of the device. (Fang; column 4, lines 54-55)

In re claim 5, Iguchi in view of Fang discloses the device of claim 1, wherein each of said sidewall (16) extends, with its height being gradually decreased, on said semiconductor substrate in a direction in which both said side walls are brought near to each other from side portions of both said electrodes facing each other and wherein said gate electrode is formed in a manner that its both sides are disposed on said side walls.

Conclusion

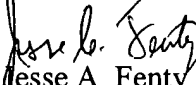
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hayashida et al. (U.S. Patent No. 5,903,029); Gauthier, Jr. et al. (U.S. Patent No. 6,268,286 B1); and Wieczorek et al. (U.S. Patent No. 6,281,086 B1) disclose similar device structures to that of the claimed invention.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A. Fenty whose telephone number is 703-308-8137. The examiner can normally be reached on 5/4-9 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-746-3892 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Jesse A. Fenty
Examiner
Art Unit 2815

JAF
May 6, 2002